REMARKS/ARGUMENTS

Claims 1-10 are pending in this application.

The dependency of claim 3 has been changed so that the claim now depends from claim 2.

All claims were rejected for anticipation or obviousness (claim 5 only) over Concannon (5,606,173) because Concannon was viewed as disclosing every element of claim 1.

The present invention seeks to overcome problems encountered when contrasting marks arranged on two adjacent reading tracks carried by a web must be sensed or read. As is described in paragraph 0008 of this application, prior art sensors employed for reading marks arranged on adjacent reading tracks typically involve one or two light sources and at least two light receivers arranged in a common housing. The problem with such sensors is that they have a fixed, unvariable distance between the light receivers. As a result, as is described in paragraph 0010 of this application, such sensing systems require that the distance between the two reading tracks is fixed and invariable, which is not necessarily the case. Thus, for reading differently spaced tracks, a different reading head is required and/or must be installed.

The present invention solves the problem encountered in the past in that two separate but otherwise essentially identical optical heads are adjustably connected to each other. The lenses of the optical systems in the two heads are asymmetrically positioned on the respective reading heads so that they can be moved into close proximity to each other for reading marks on closely adjacent reading tracks. The heads can further be moved relative to each other for reading markings on tracks with different spacings between them, as is described in paragraphs 0013 and 0014 of this application.

Concannon discloses an imaging system for reading markings on opposite sides of a document traveling along a document track 14 between opposing, spaced-apart track side walls 16, 18, as illustrated in Fig. 2.

For this purpose, Concannon provides front and back imaging systems 10 and 12. This is described in Concannon as follows:

> In a preferred embodiment, the document handling system has two imaging systems which image opposite sides of the document as it travels through the track. The imaging systems optically interact with the document through window slots in the track. Preferably, the window slots in the front and rear of the track are offset so that illumination light from the front side of the track does not interfere with the light reflected from the back side of a document to the back side imaging system. (column 2, lines 19-28)
>
> To access the opposing sides of the document being scanned:
>
> [e]ach side wall 16 and 18 includes a rectangular window (not-shown) extending linearly from the top of the track 14 to the bottom of the track 14 through which a document in track 14 can be imaged. (column 5, lines 5-8)
>
> The fiber optic bundle 20 or 20' is comprised of a stack of optical fibers which produce a linear bar of light (FIG. 2 only showing the top fiber 34 or 34' and the linear bar extending down into the paper). The linear bar forming primary light beam 22 or 22' is tall enough to illuminate a document sent through track 14 from its top to its bottom. (column 5, lines 26-31)

Thus, Concannon illuminates a document traveling along track 14 from opposite sides of the track, and the document is read by imaging systems 10, 12 deployed at opposite sides of the track, as is illustrated in Fig. 2. Concannon does not disclose or in any form suggest a scanning system in which two reading or optical heads are arranged side-by-side for reading closely adjacent reading tracks. In fact, reading closely adjacent reading tracks is an impossibility in the system of Concannon because each of Concannon's imaging systems illuminates the document across its entire height (or width) in a direction perpendicular to the direction in which the document travels along track 14. Each of Concannon's two imaging systems therefore reads the entire height (or width) of the document in track 14 and is incapable of reading two (or more) closely adjacent tracks individually.

Independent claim 1 is limited, amongst others, to an optoelectronic sensing device "for detecting first and second contrast marks arranged next to each other along first and

second reading tracks ...." As is discussed in the preceding paragraph, Concannon does not disclose how to detect marks on adjacent first and second reading tracks. Concannon's device is also incapable of reading such tracks. Thus, for at least this reason, Concannon does not anticipate claim 1.

Claim 1 further requires "a connector joining the first and second optical heads so that the lenses are arranged asymmetrically in the respective optical heads and in immediate proximity to each other for providing a smallest possible, adjustable spacing between the lenses".

Concannon discloses no connection between the imaging systems 10 and 12, other than that the systems are part of an overall device. The lenses 36, 36' of Concannon's imaging systems 10, 12 are not arranged asymmetrically in the respective devices and are not in immediate proximity to each other. In Concannon, the respective lenses are disposed on opposite sides of reading track 14 and a document traveling thereon that carries the marks to be read. Moreover, the lenses of the respective imaging systems of Concannon are not arranged asymmetrically for providing a smallest possible, adjustable spacing between the lenses as required by claim 1. In whatever orientation the imaging systems 10, 12 are arranged, and even if the systems could be placed side-by-side, which is not the case, each imaging system reads across the entire height (or width) of the document and, therefore, cannot provide an adjustable spacing between the lenses for reading the spaced-apart reading tracks. For at least these further reasons, Concannon does not anticipate claim 1.

Independent claim 9 includes the same limitations as claim 1 discussed above. Thus, claim 9 is not anticipated for at least the same reasons why claim 1 is not anticipated.

Further, claim 9 recites that the contrast marks are "arranged on a common surface next to each other along first and second reading tracks" and that "the lenses face the common surface ...."

As was discussed above, and as is evident from Fig. 2 of Concannon, the contrast marks to be read are not arranged on a common surface. To the contrary, the data read by Concannon is arranged on different, oppositely facing surfaces of the document traveling along

track 14. Consequently, lenses 36, 36' of Concannon do not face a common surface, but face different surfaces, namely the front and back of the document being read. There is no disclosure or suggestion of any type in Concannon to mount the optical systems 10, 12 so that they, and in particular their respective lenses, face a common surface.

For at least this further reason, Concannon does not anticipate independent claim 9.

New independent claim 10 substantively includes the limitations of claim 1 discussed above. Thus, claim 10 is not anticipated for at least the same reasons why claim 1 is not anticipated.

Further, claim 10 requires that the respective lenses of the optical heads "face in a common direction", a limitation very similar to the one included in and discussed in connection with claim 9 above. Thus, Concannon does not anticipate claim 10 for at least this further reason discussed in connection with claim 9.

Claim 10 additionally recites that the lenses "are proximate and can be moved relative to each other transversely to the transport direction for adjusting a spacing between the lenses according to the spacing between the reading tracks".

Concannon contains no disclosure whatsoever for adjusting the lenses in a direction transverse to the transport direction. The imaging systems 10, 12 of Concannon read over the entire height (or width) of the document being scanned, and there is no adjustability of the lenses in a direction transverse to the transport direction. As a result, Concannon also does not disclose and cannot adjust the spacing between the lenses "according to the spacing between the reading tracks". For at least this additional reason, Concannon does not anticipate new independent claim 10.

In view of the foregoing, applicant submits that Concannon does not anticipate or in any form suggest the subject matter of independent claims 1, 9 and 10.

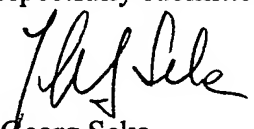
Claims 2-8, which depend from claim 1, are directed to specific details of the present invention which are independently patentable. These claims are further allowable because they depend from an allowable parent claim.

CONCLUSION

In view of the foregoing, applicant submits that all claims are in condition for allowance, and a corresponding notification at an early date is requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (415) 576-0200.

Respectfully submitted,



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